Claims

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- 1. A process for producing polymers comprising repeating units derived from at least one isoolefin monomer, at least one multiolefin monomer and optionally further copolymerizable monomers in the presence of at least one organic nitro compound and AlCl₃/water wherein the process is conducted in the absence of compounds selected from the group consisting of vanadium compounds, zirconium halogenid, hafnium halogenides.
- 10 2. A process according to Claim 1, wherein said organic nitro compound is of the general formula (I)

 $R-NO_2$ (I)

- wherein R represents H, C₁-C₁₈ alkyl, C₃-C₁₈ cycloalkyl or C₆-C₂₄ cycloaryl.
 - 3. A process according to Claim 1 or 2, wherein the concentration of said organic nitro compound in the reaction medium is in the range from 5 to 500 ppm.

4. A process according to any of the claims 1-3, wherein said isoolefin is isobutene.

5. A process according to any of the claims 1-4, wherein said multiolefin is isoprene.

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